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Filed: March 9, 2001
Title: Multi-Input, Multi-Output Motion Control for a
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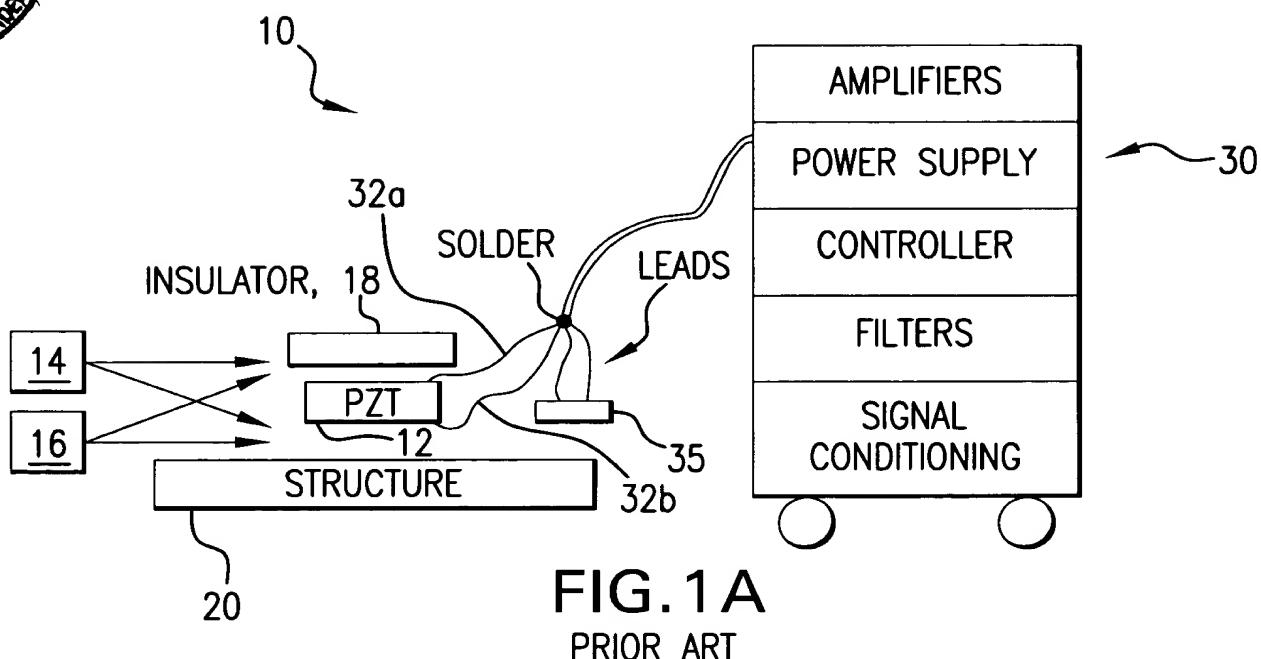


FIG. 1A
PRIOR ART

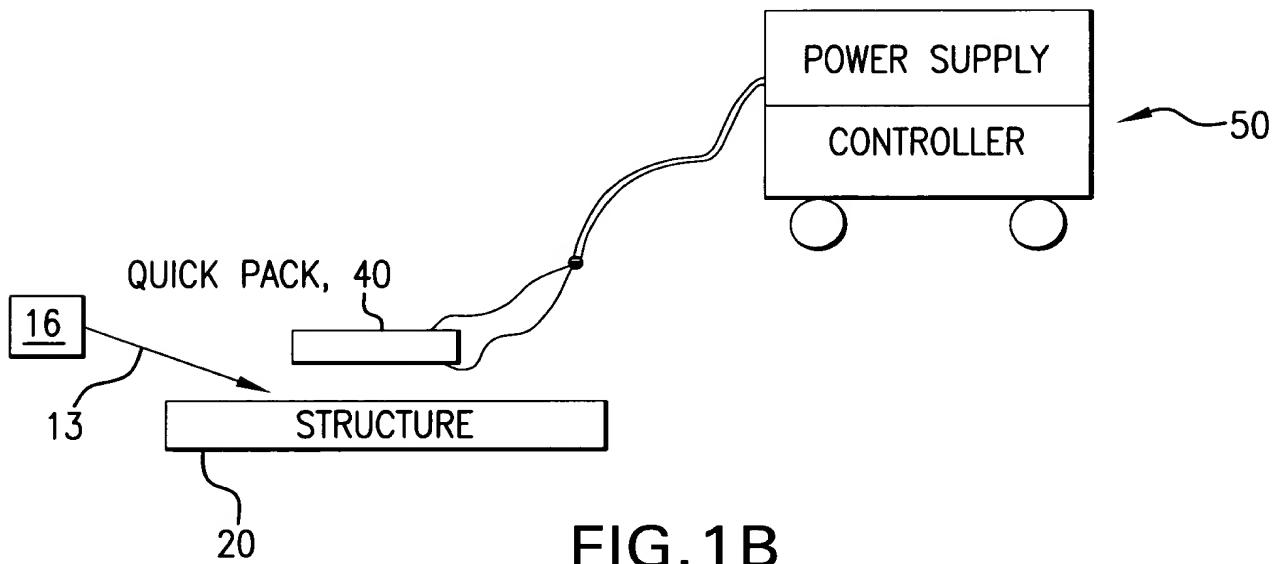


FIG. 1B

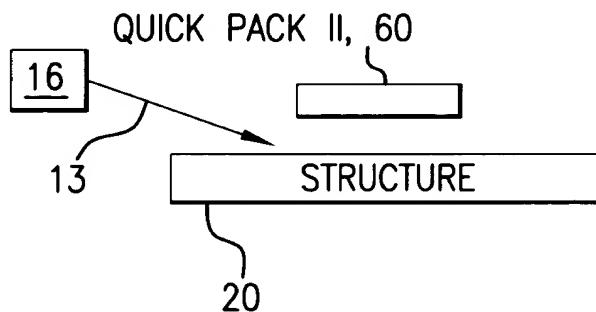
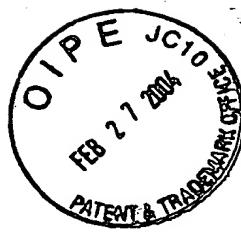


FIG. 1C



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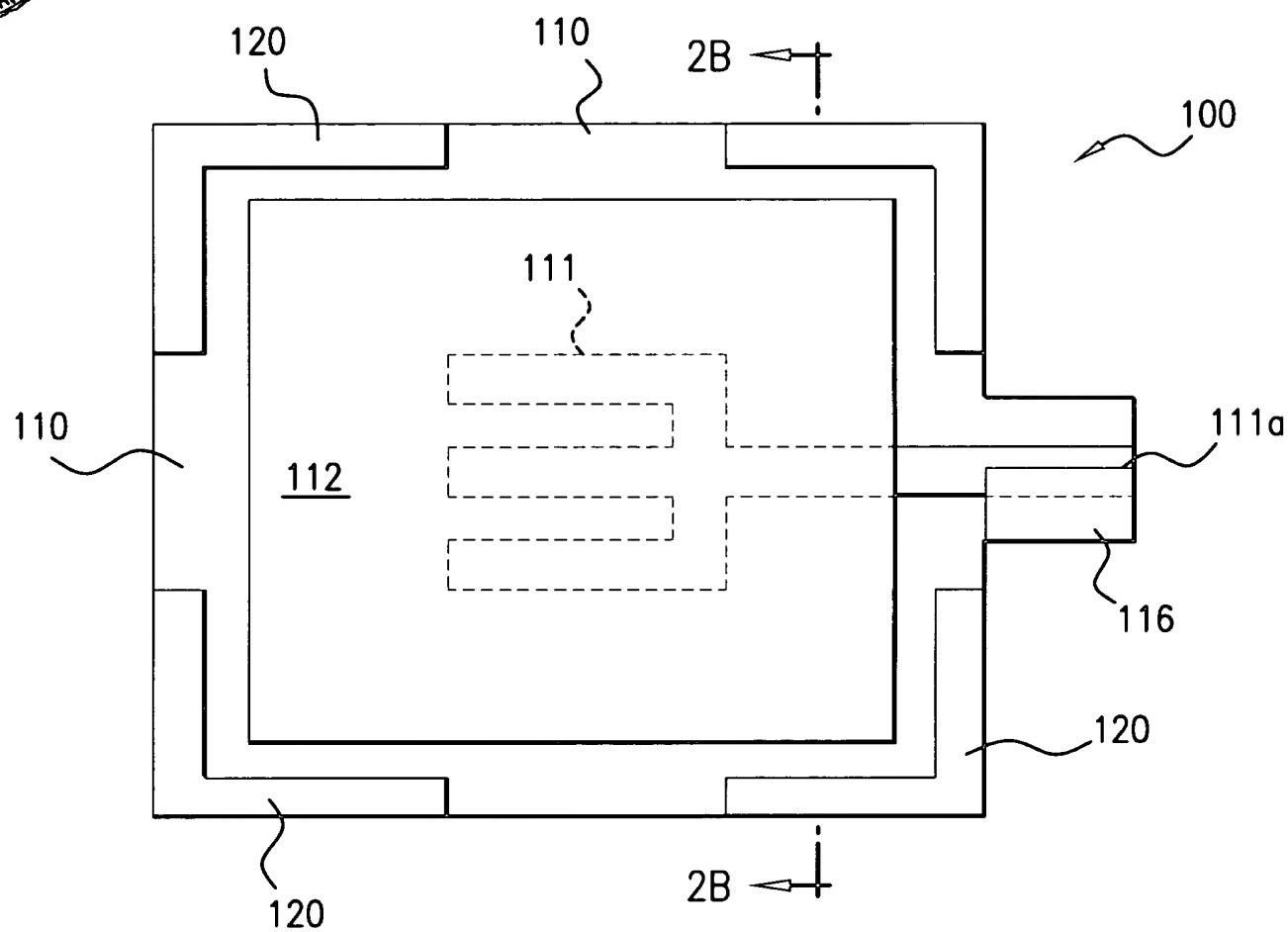


FIG. 2A

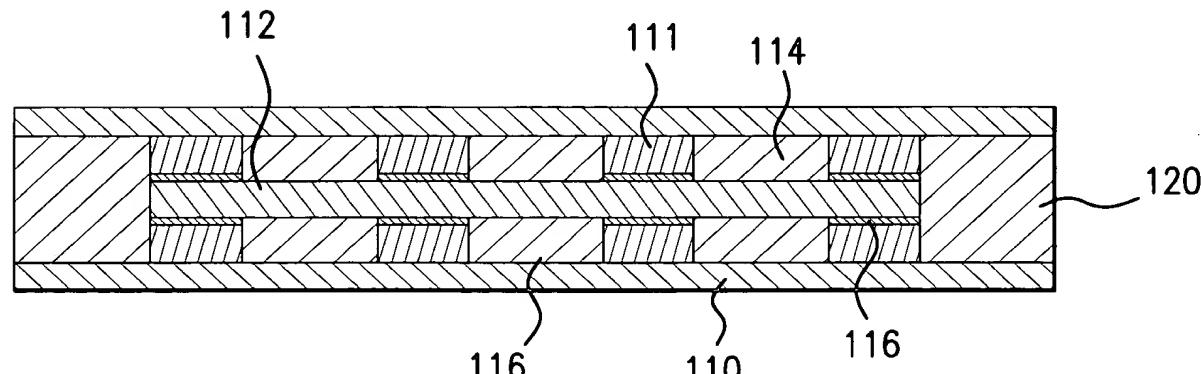
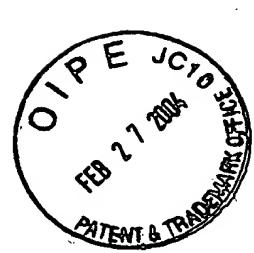


FIG. 2B



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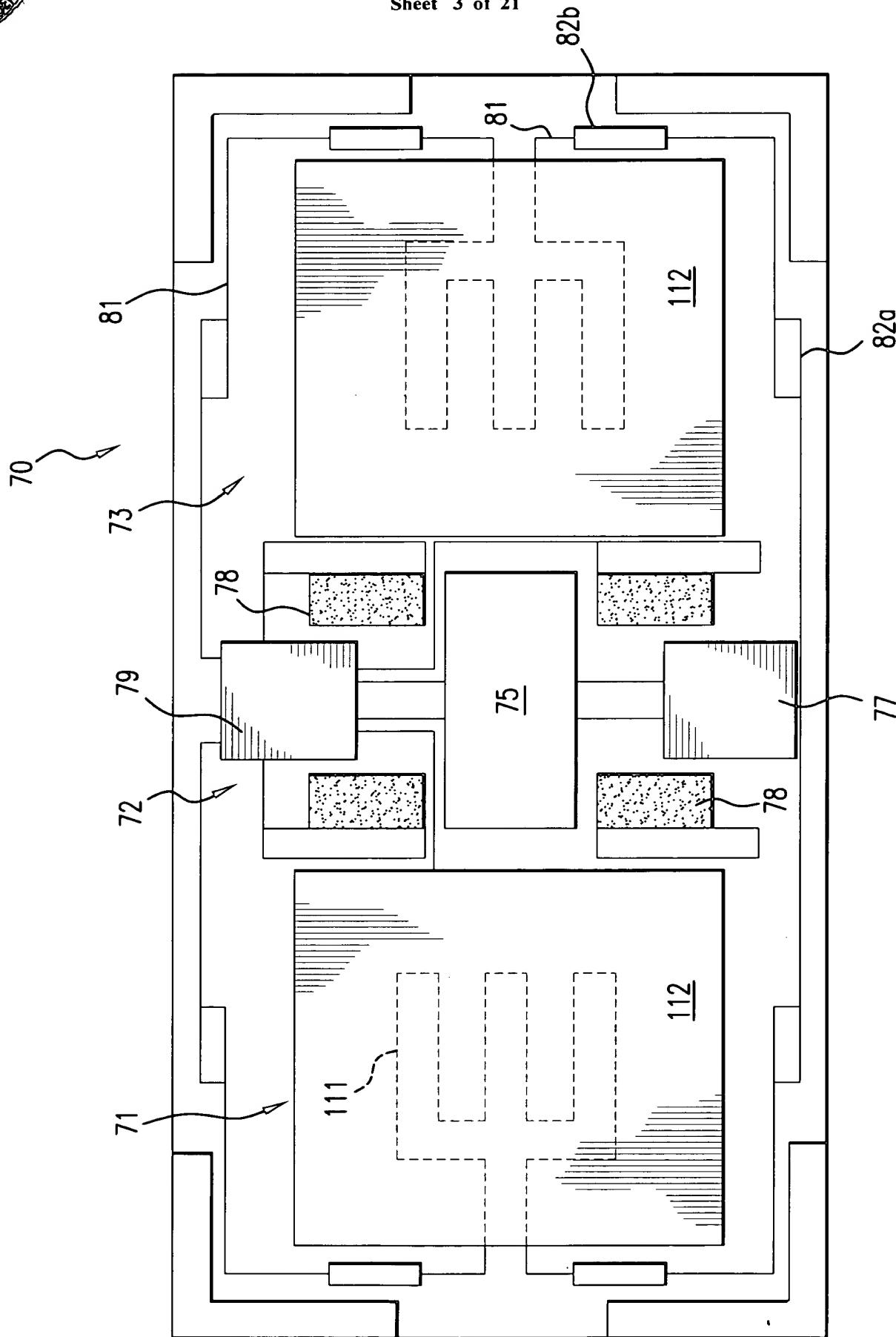


FIG. 2C



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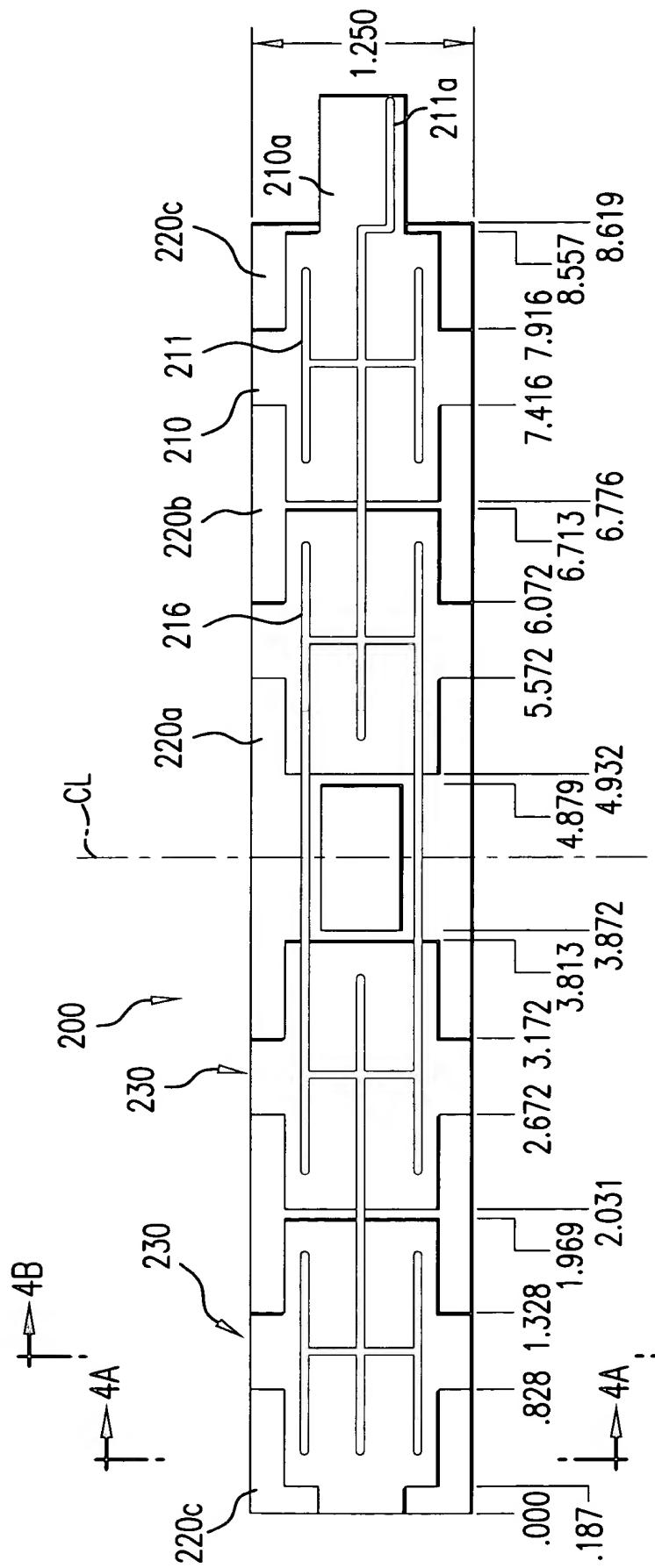
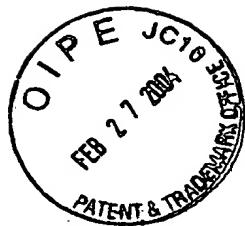


FIG. 3



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214b

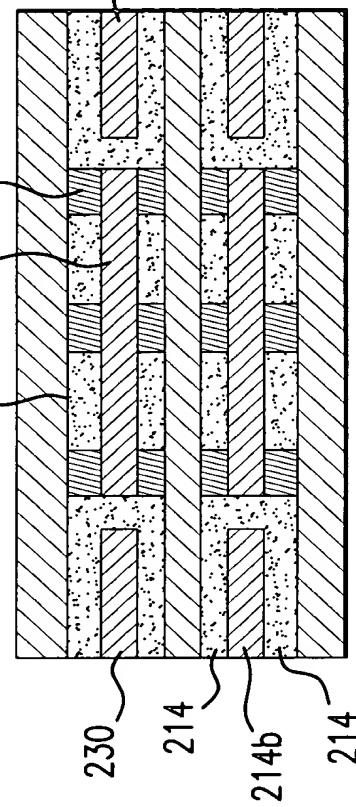


FIG. 4B

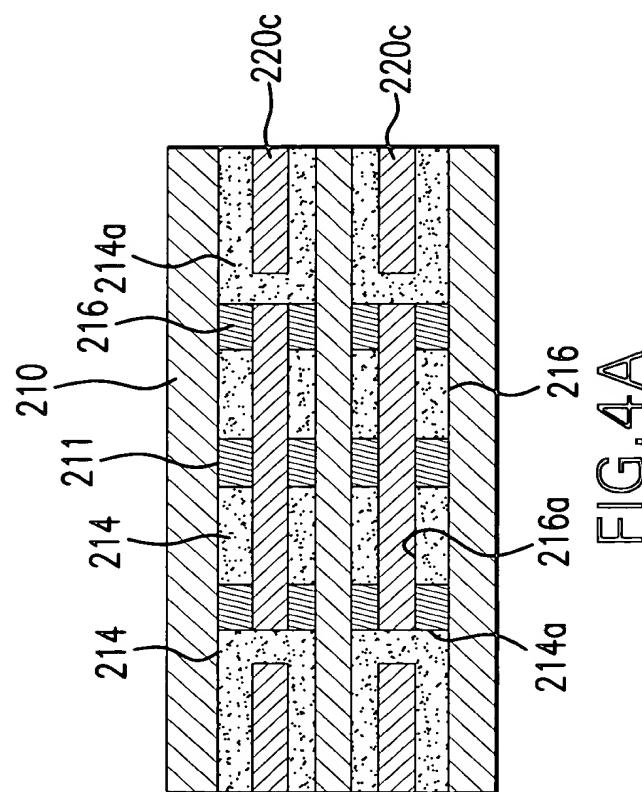
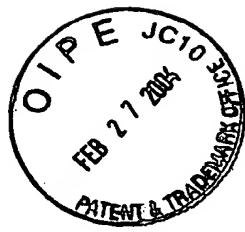


FIG. 4A



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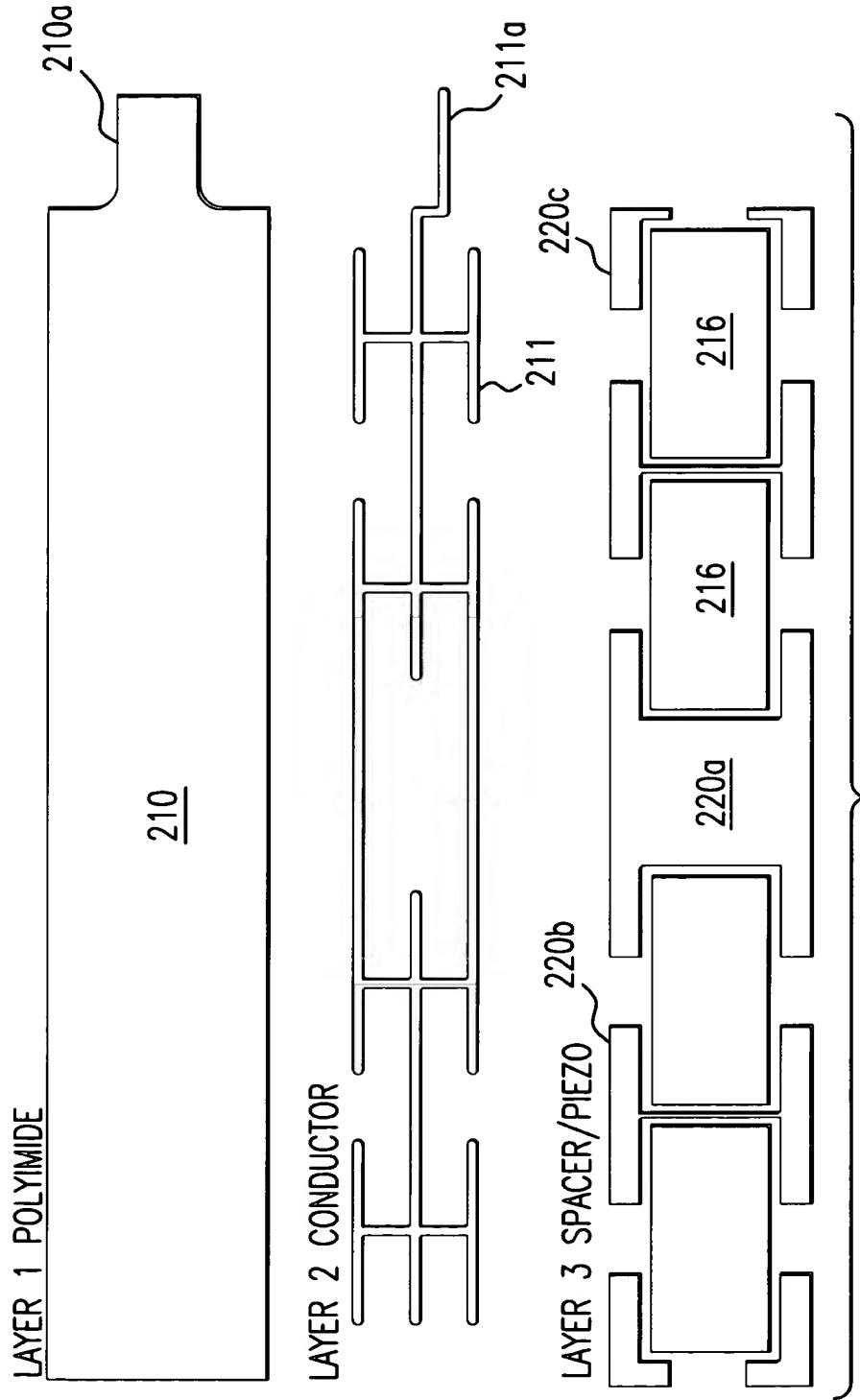


FIG. 5

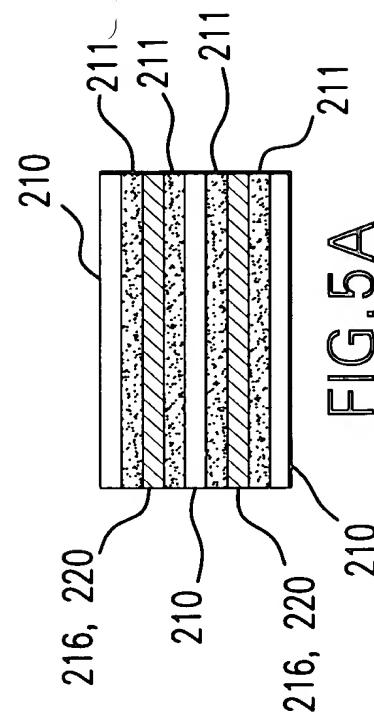


FIG. 5A



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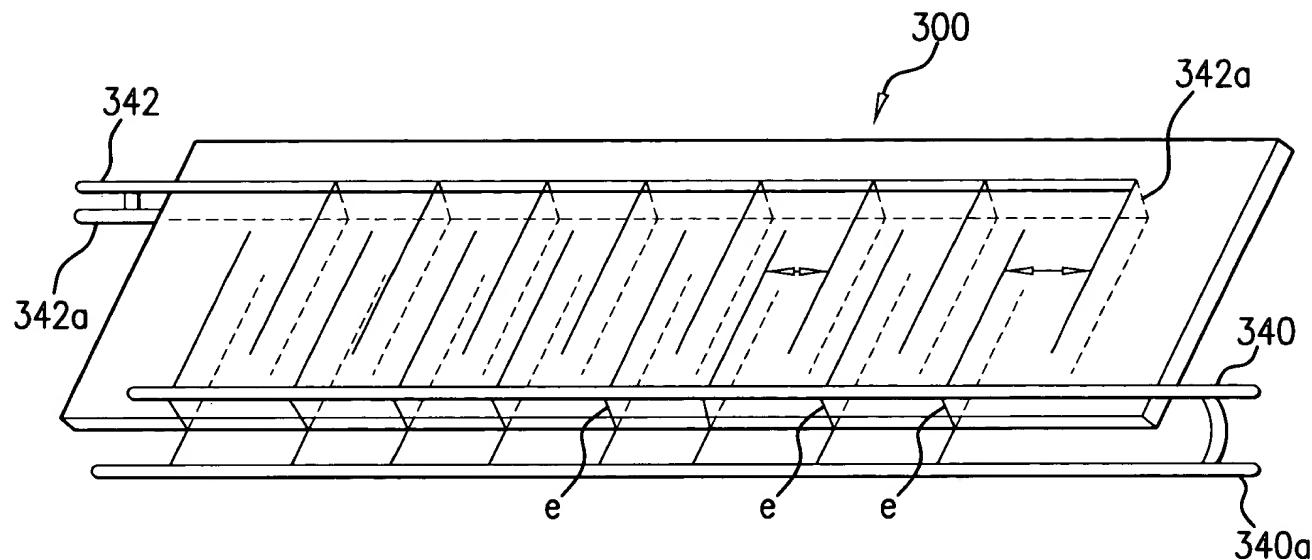


FIG. 6

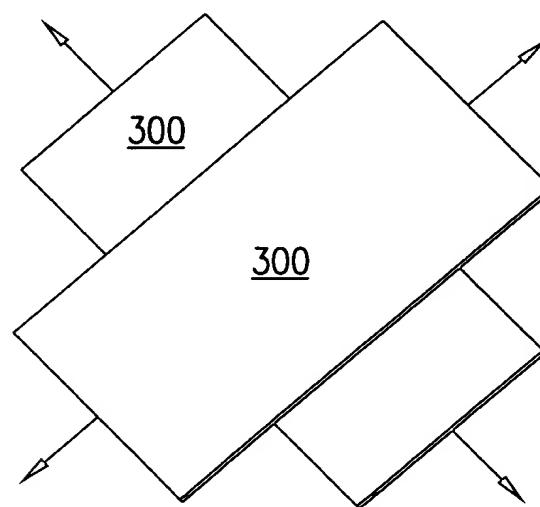


FIG. 7



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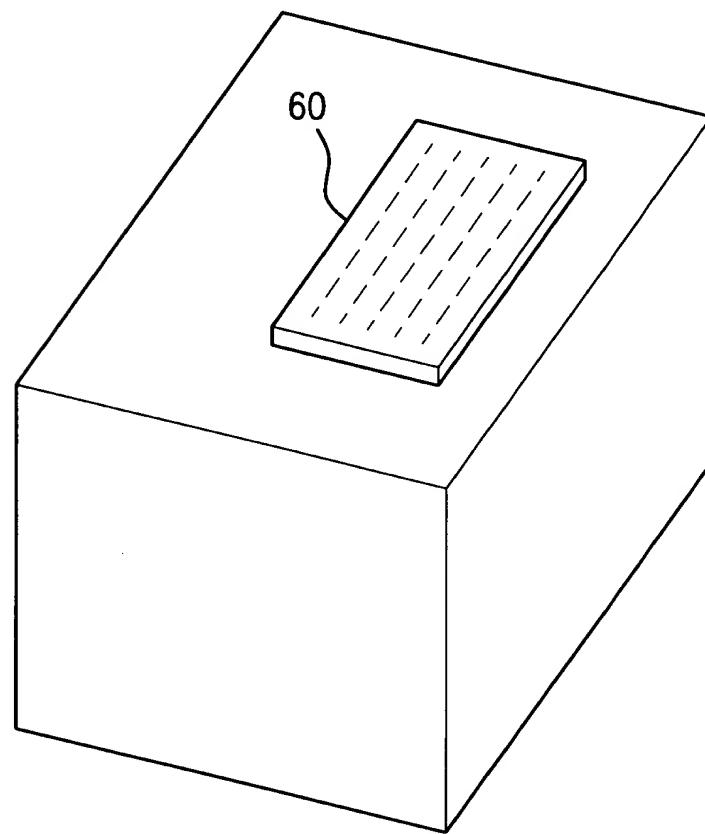


FIG. 8A

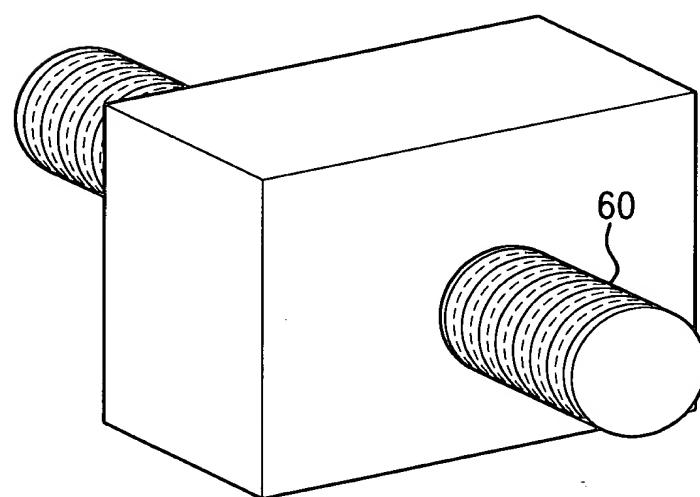


FIG. 8B

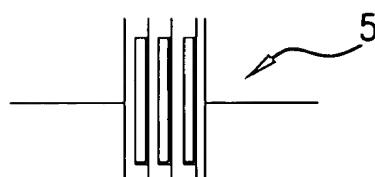
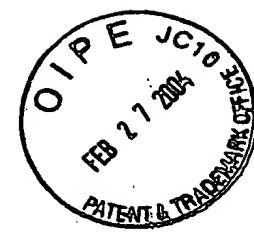


FIG. 9A

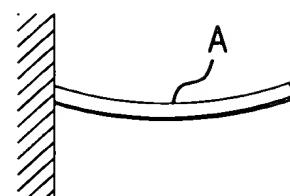


FIG. 9B



FIG. 9C

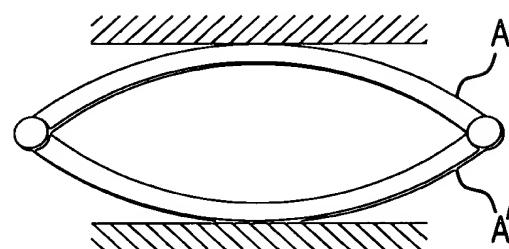


FIG. 9D

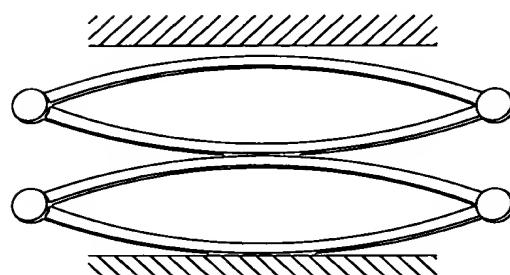


FIG. 9E

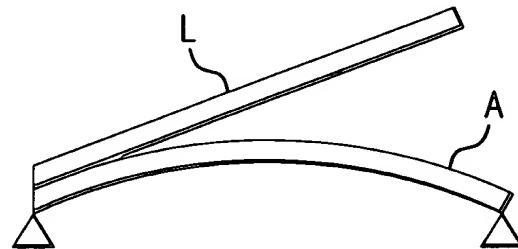


FIG. 9F

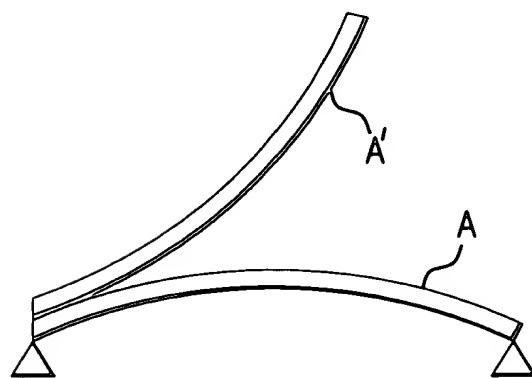


FIG. 9G

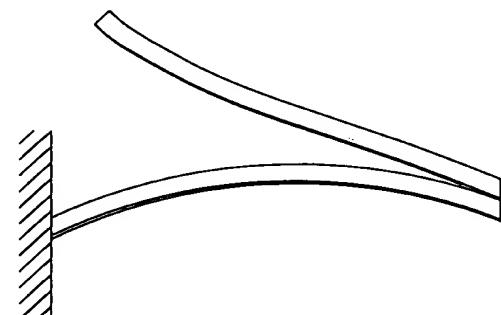
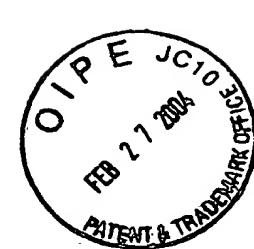


FIG. 9H



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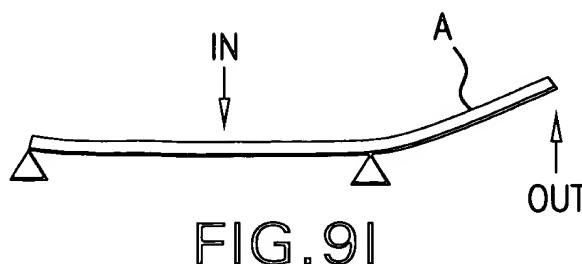


FIG. 9I

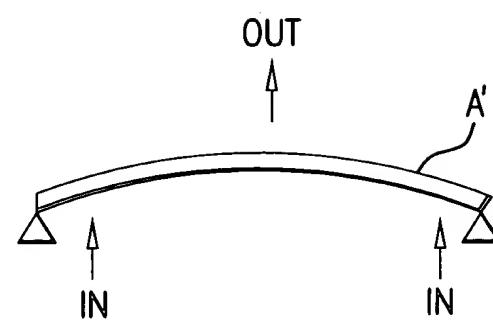


FIG. 9J

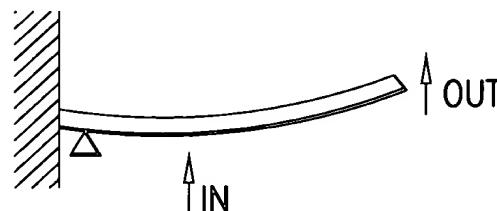


FIG. 9K

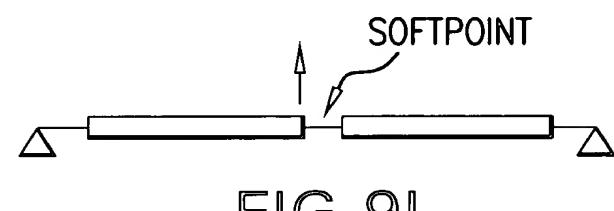


FIG. 9L

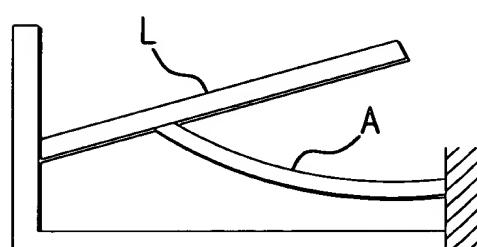


FIG. 9M

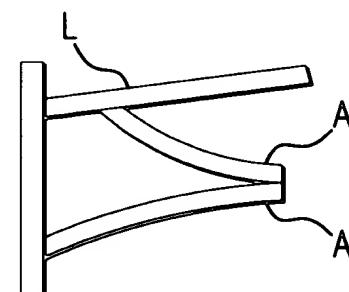


FIG. 9N

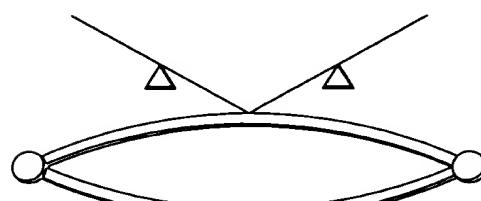
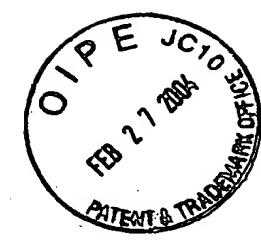


FIG. 9O



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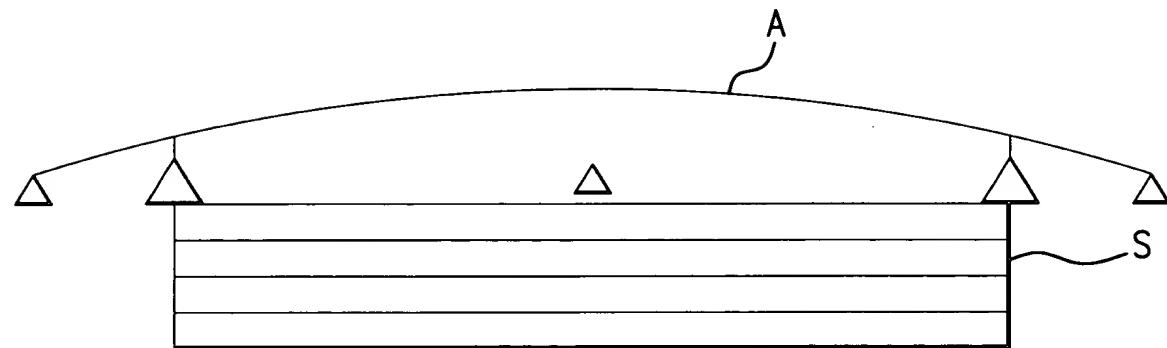


FIG. 9P

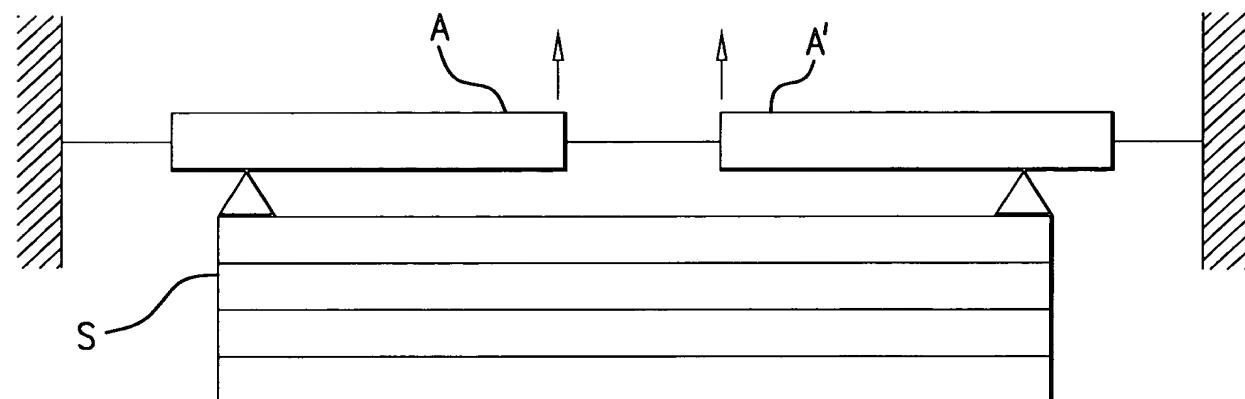


FIG. 9Q



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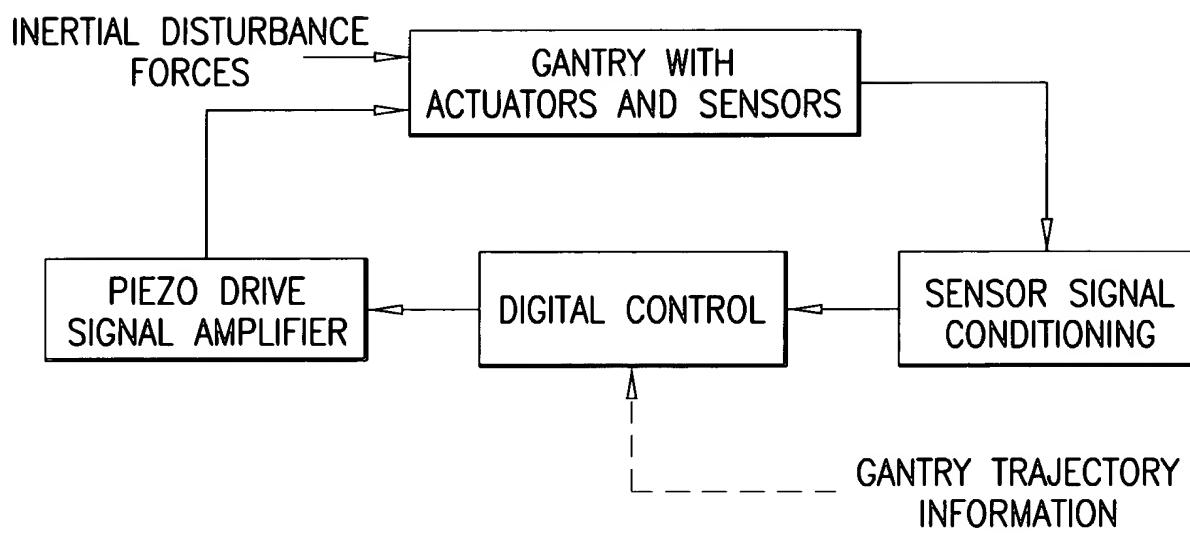
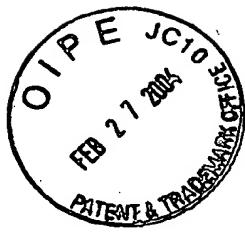


FIG. 10



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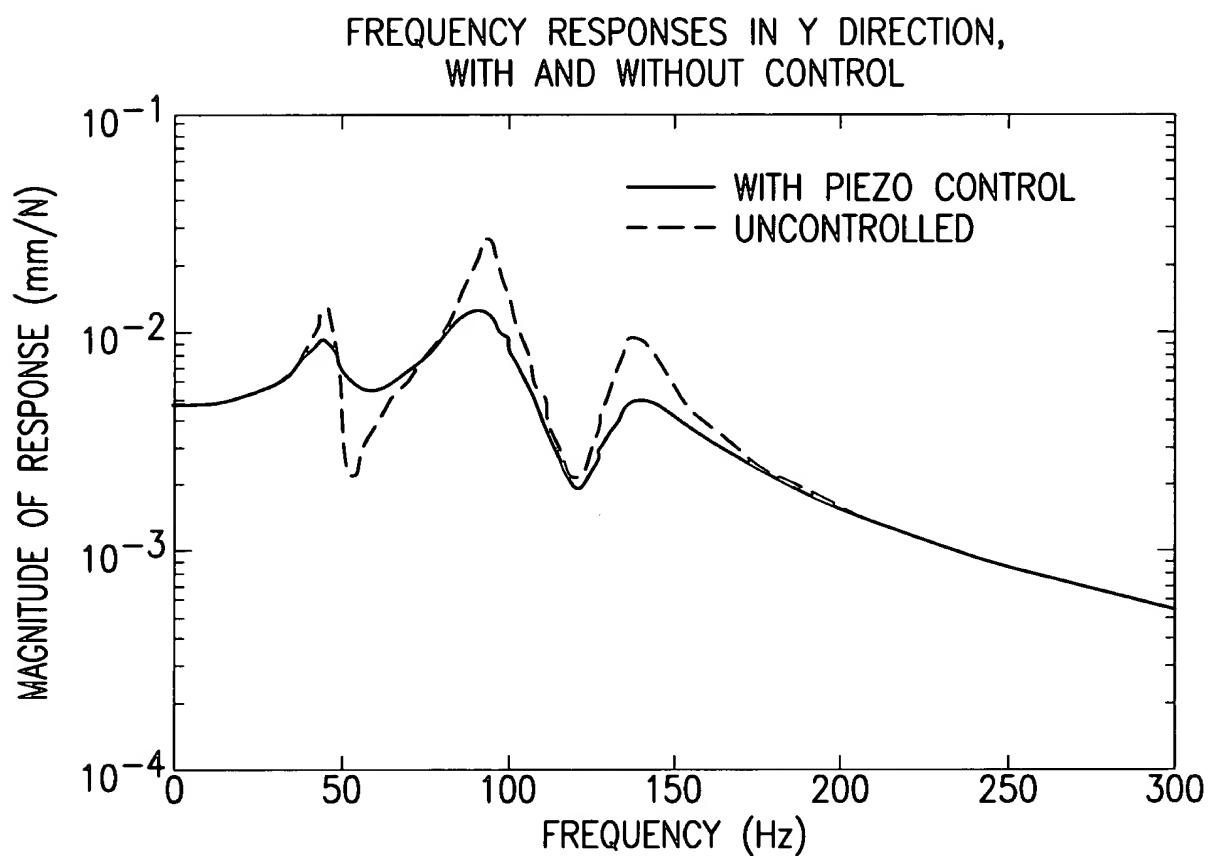
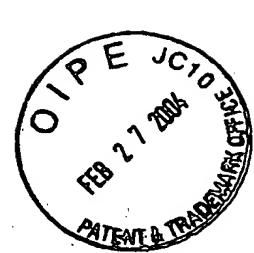


FIG. 11



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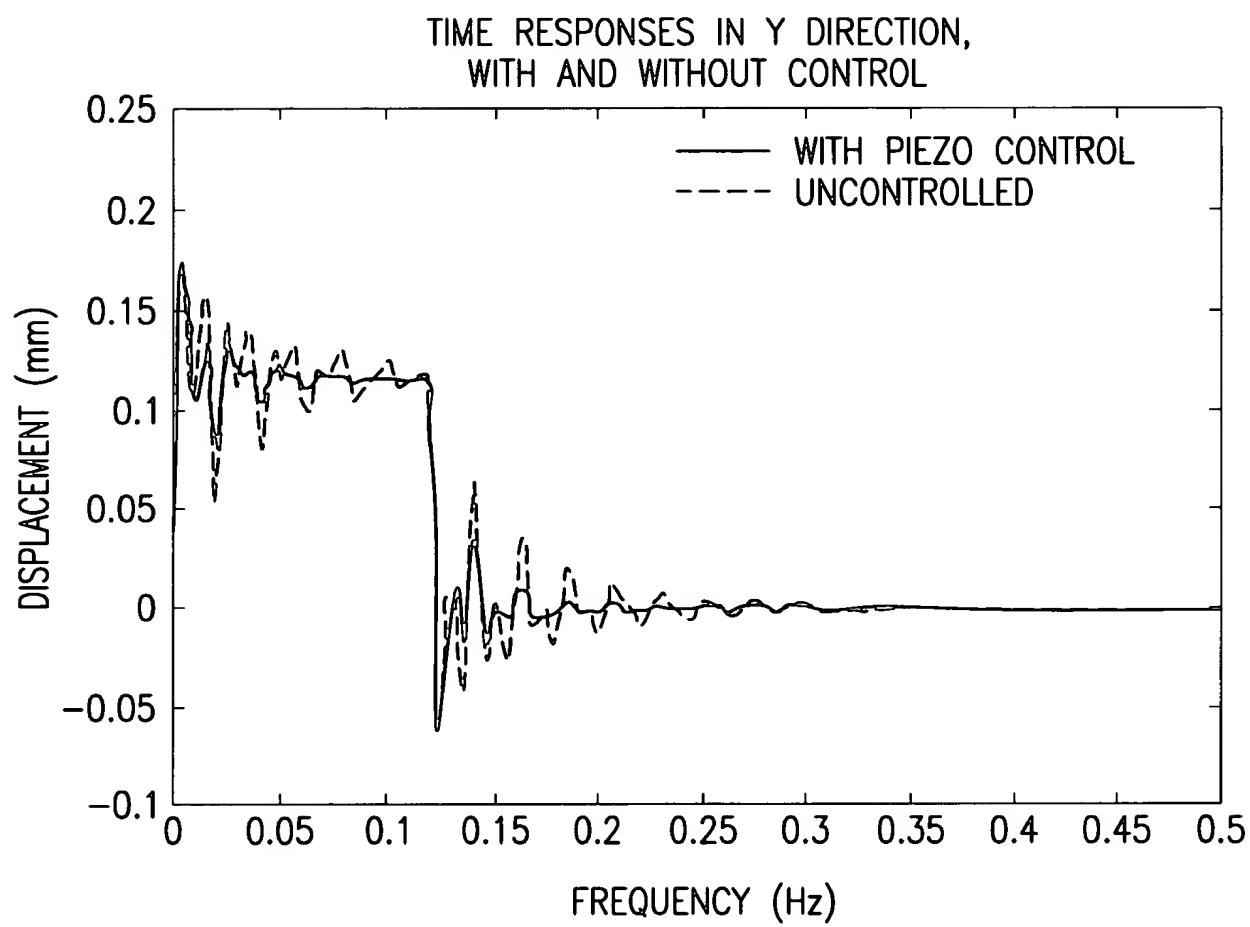


FIG. 12



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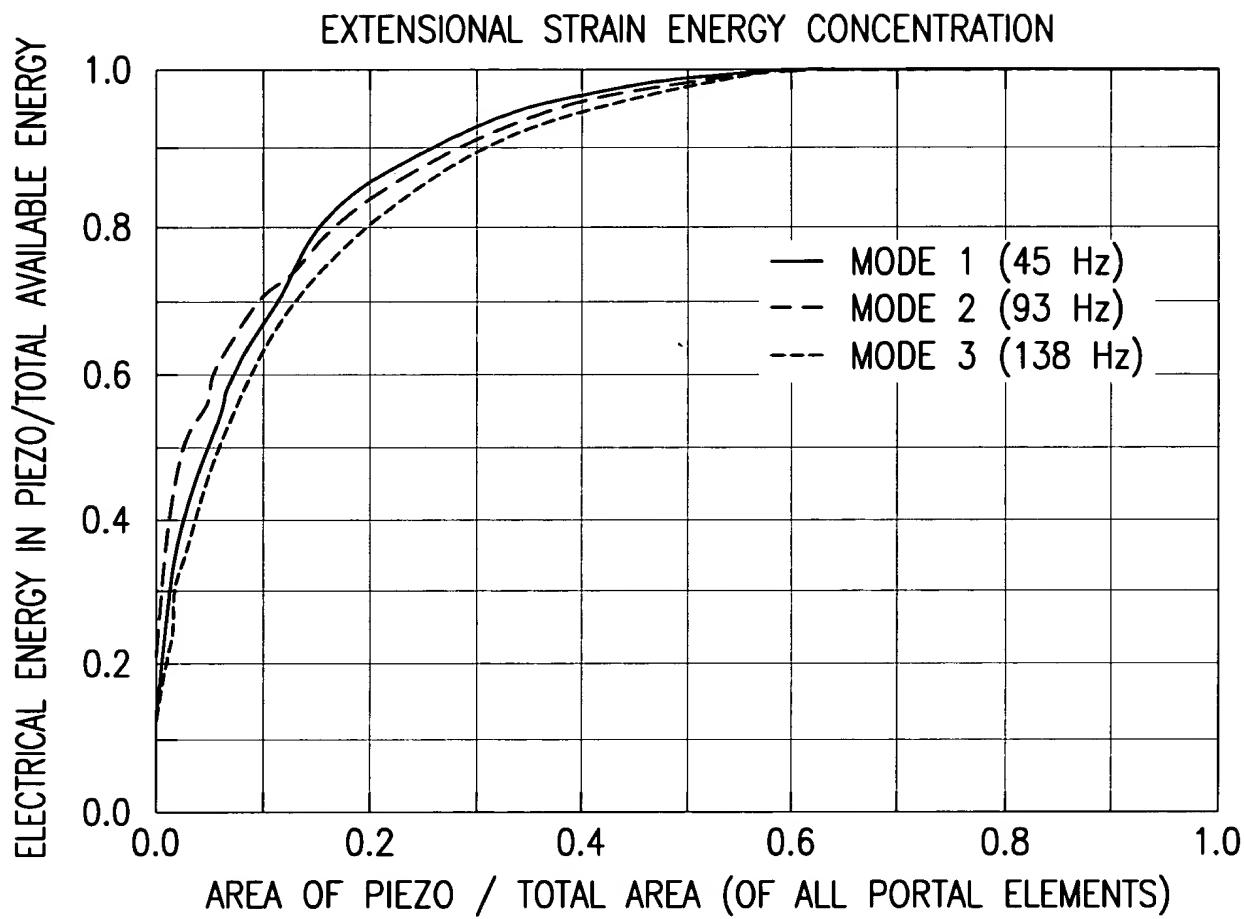
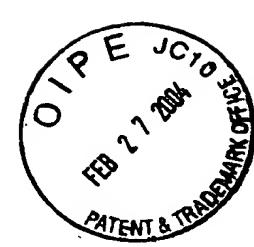


FIG. 13



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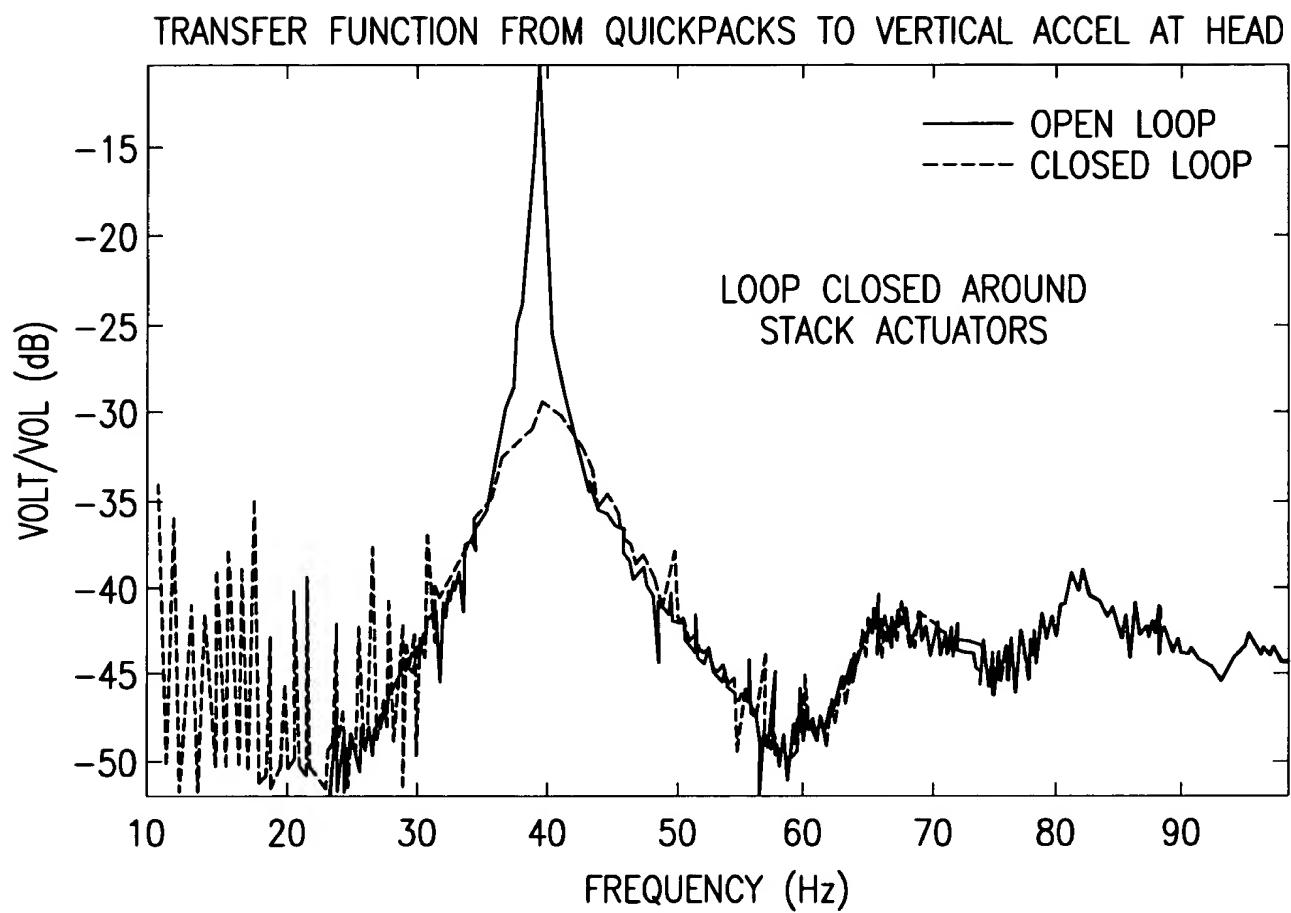


FIG. 14



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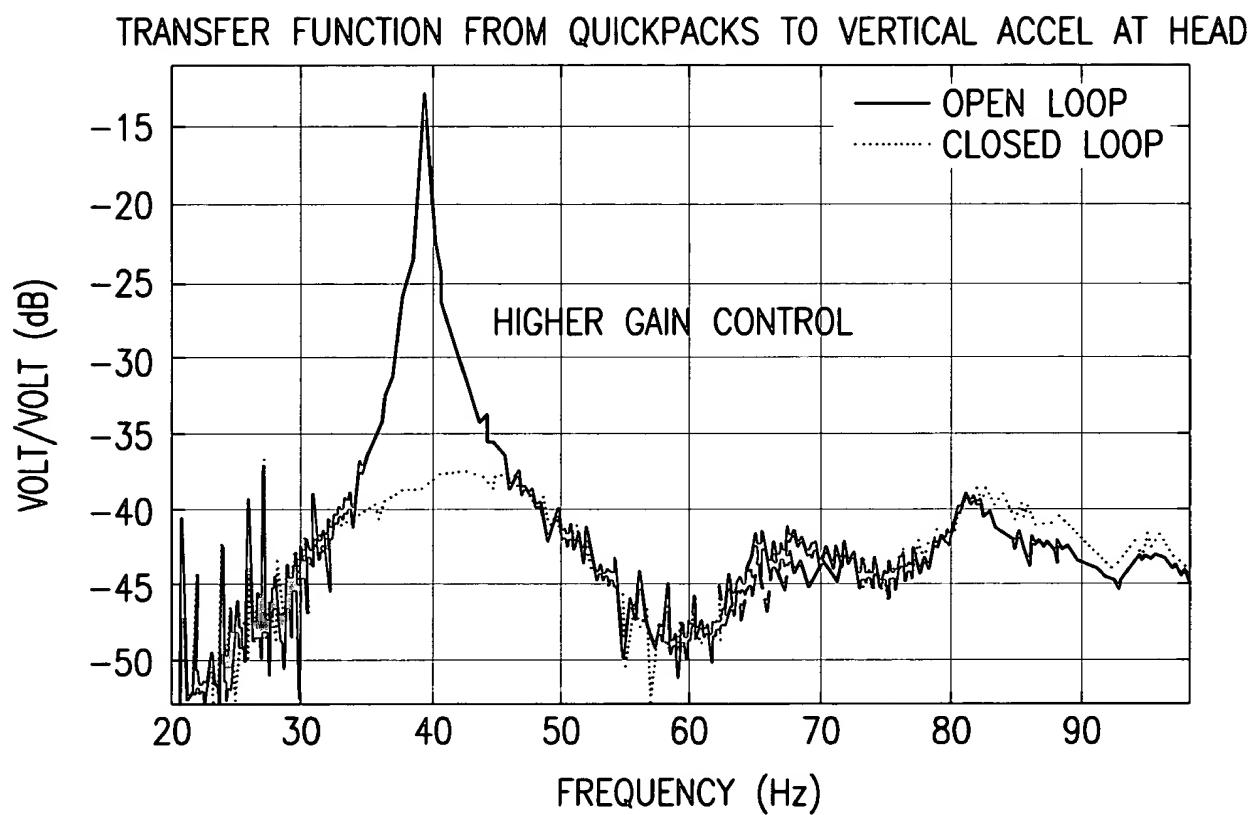
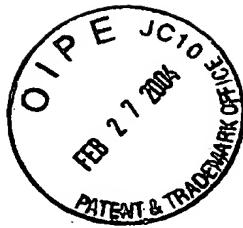


FIG. 15



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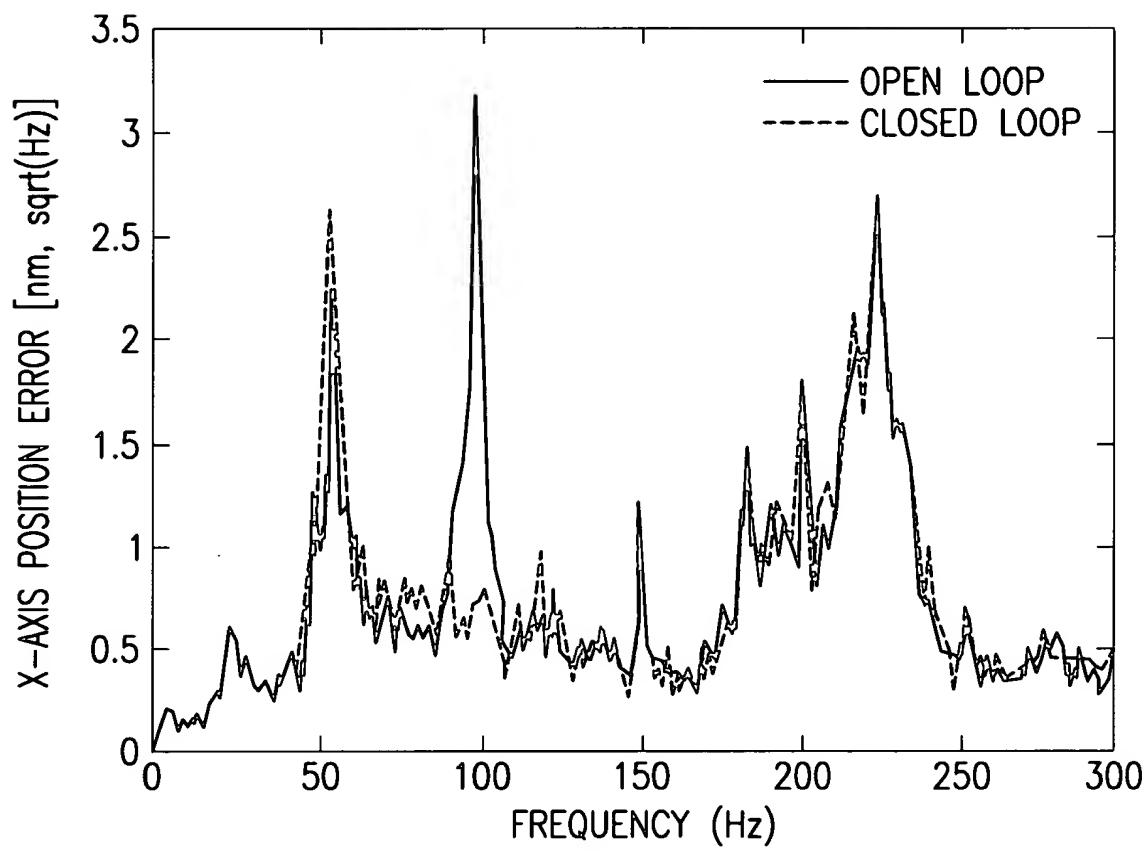
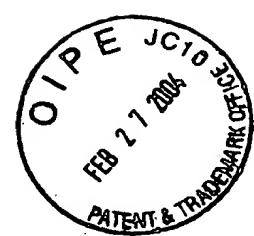


FIG. 16



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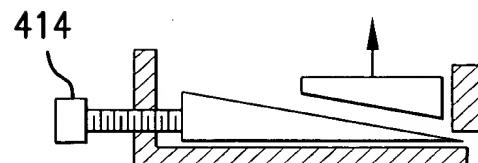


FIG. 17

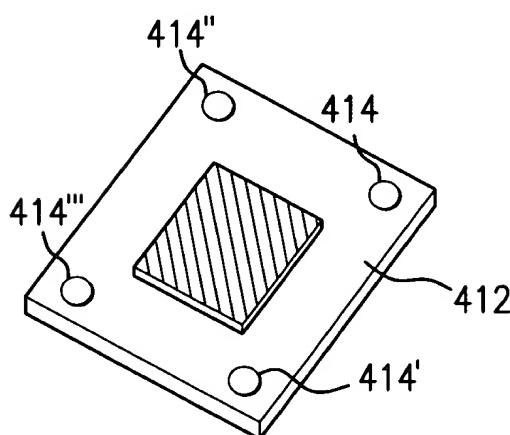


FIG. 18

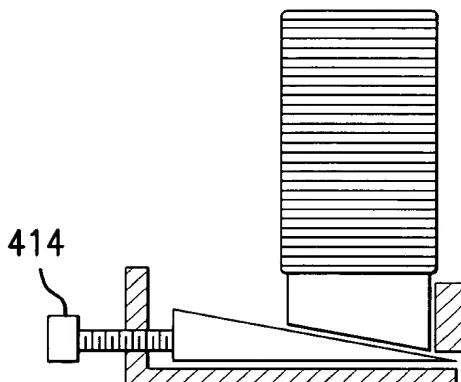


FIG. 19

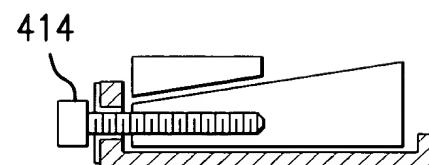


FIG. 20



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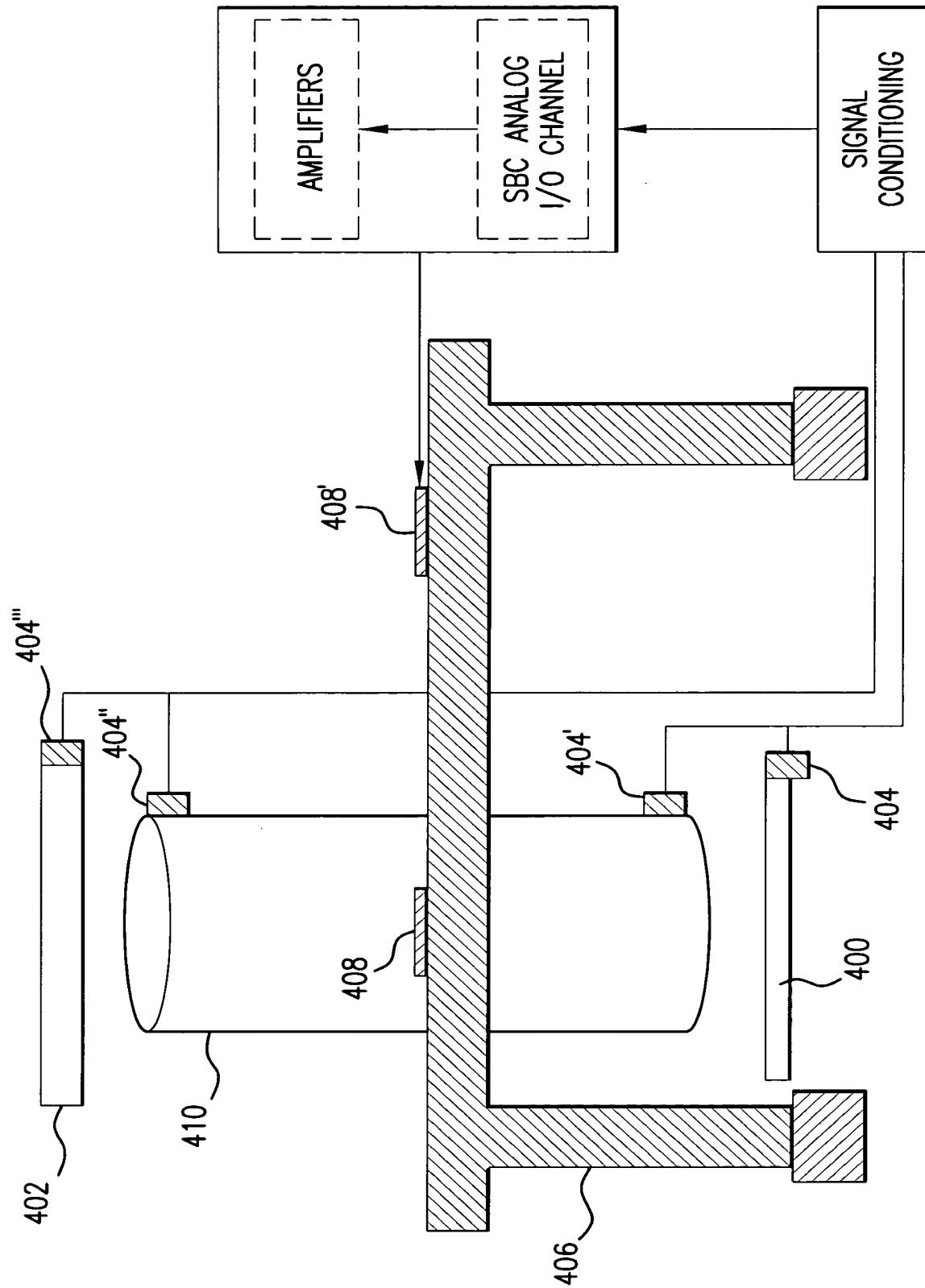
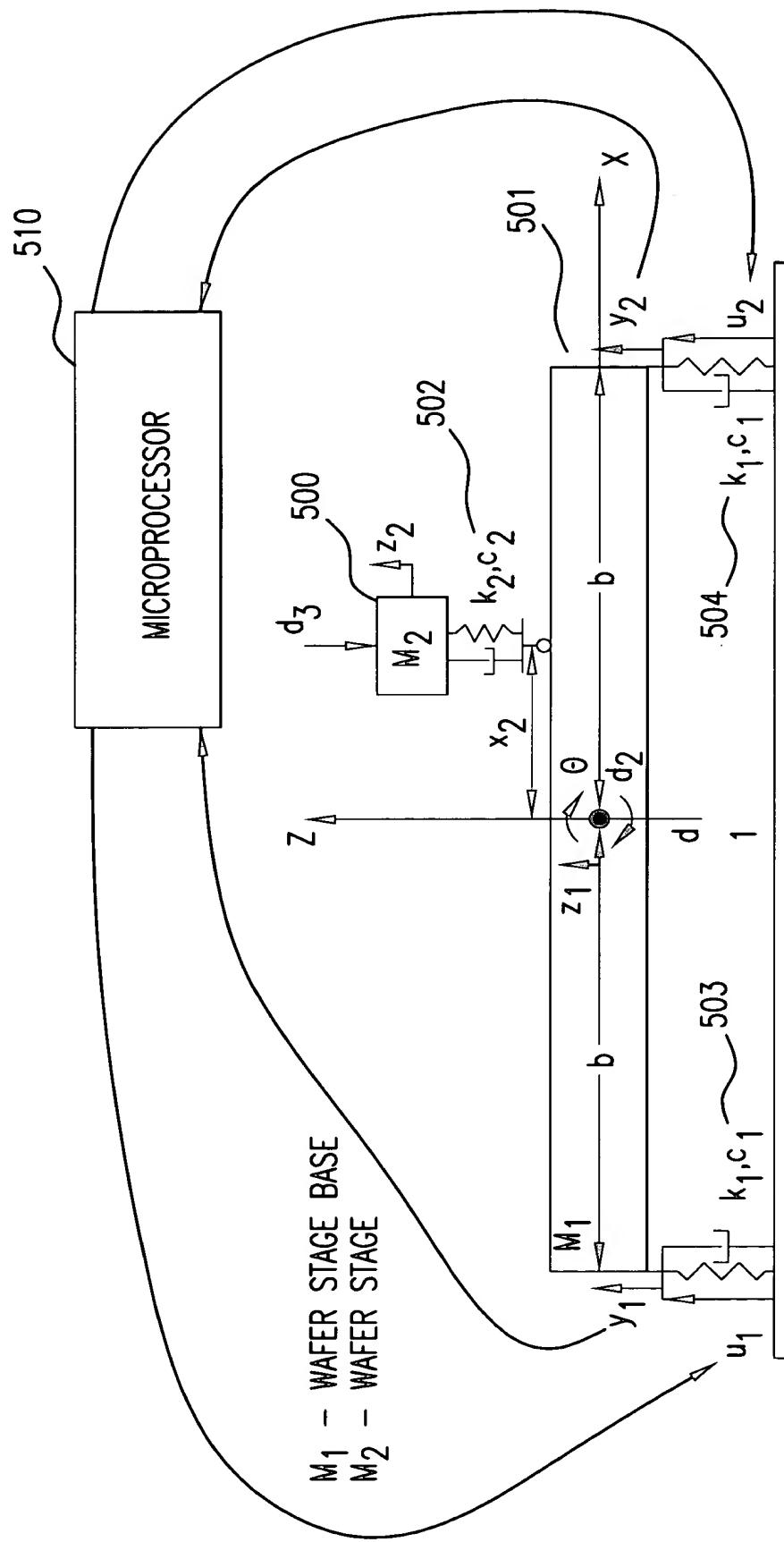


FIG.21



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- INPUTS (u_1): VOICE COIL FORCES ON BASE IN Z
- OUTPUTS (y_1): LASER DISPLACEMENT MEASUREMENTS COLLOCATED WITH VOICE COIL INPUTS
- DISTURBANCES (d_1): Z-FORCE AND θ MOMENT ON BASE, Z FORCE ON STAGE

FIG. 22